

Michigan Office of the Great Lakes

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Director
7 May 2013



Department of
Environmental Quality
PURE MICHIGAN



About the Office

Michigan's *Office of the Great Lakes* assists in policy development and implements programs to protect, restore and sustain our most precious natural resource.



Collaborates with federal partners, states and provinces, state agencies and legislators, and local communities to:

- support sustainable use of coastal resources
- coordinate restoration of severely degraded areas of concern
- coordinate Lakewide Management Planning
- address water quality and quantity
- prevent aquatic invasive species
- engage in emerging issues (e.g. emergency dredging)
- participate in regional programs

OGL's mission is to ensure a healthy environment, strong economy and a remarkable quality of life with respect to our Great Lakes.

Regional Governance, Coordination

- Council of Great Lakes Governors
- Great Lakes Commission
- International Joint Commission
- Great Lakes Protection Fund
- Great Lakes - St. Lawrence River Basin Water Resources Compact Council and Regional Body
- Great Lakes Water Quality Agreement (U.S. and Canada Agreement)
- Asian Carp Regional Coordinating Council (ACRCC)
- Great Lakes Regional Initiative
- Many Industry and Environmental Organizations



Areas of Concern (AOC) Program

The federal Areas of Concern Program is administered by the Office of the Great Lakes in Michigan.

Michigan has 14 AOC sites, each possessing a number of beneficial use impairments.

Each site has a staff coordinator who addresses restoration with the site-specific Public Advisory Council, comprised of local stakeholders.

Restoration efforts have led to the reestablishment of 17 beneficial uses in Michigan since 2011.



Michigan's Areas of Concern

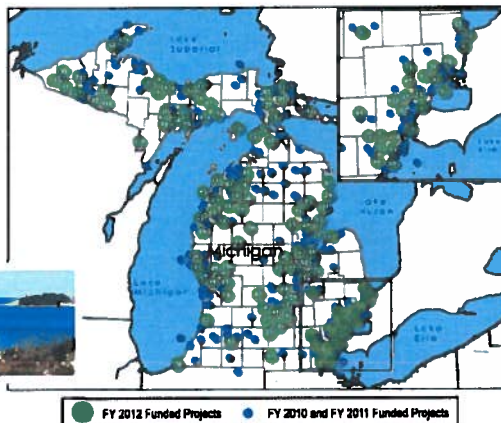


Dam Removal, River Raisin Area of Concern

Great Lakes Restoration Initiative

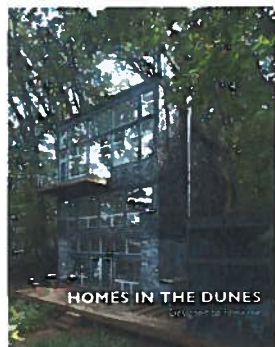
- Largest investment in the Great Lakes in two decades.
- Focused on the cleanup in Areas of Concern and other toxic sites
- Combating invasive species
- Addressing runoff and non point source pollution and nutrient pollution
- Outreach

Over \$1 billion
dollars invested
across the Great
Lakes States
through GLRI
programs



Coastal Zone Management Program

- Developed under federal Coastal Zone Management Act
- Existed since 1978
- Assists people and organizations in protecting and enhancing their coastal areas
- Mostly through grants – with federal pass through money from NOAA



Water Use

- Great Lakes-St. Lawrence River Basin Water Resources Compact
 - "Great Lakes Compact"
- Water Use Advisory Council
- Water Conflict



WWAT registrations (1864)
7-9-09 through 2-14-13

• WWAT registration



Economic Value

The Great Lakes are critical to Michigan's \$15 billion tourism industry.

- Michigan boaters spend **\$3.9 billion** each year on trips and equipment, supporting an estimated **51,000 jobs**.
- More than a million licensed anglers in Michigan contribute **\$2 billion** annually to the economy and generate **\$225 million in state tax revenue**.
- Great Lakes sport and commercial fisheries valued at **\$7 billion combined**.
- There are about **3.7 million registered recreational boats** in Great Lakes states -- about a third of the U.S. total.
- 600-plus state parks across the region accommodate more than **250 million visitors** each year.



Economic Value

Shipping: Cargo shipments on the Great Lakes-Seaway system generate \$34.6 billion of economic activity and 227,000 jobs in Canada and the U.S.

Some Other Key Sources of Economic Value from the Lakes:

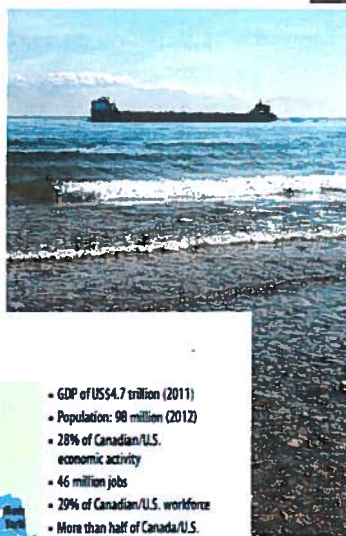
- Property Values
- Aquaculture & agriculture (unique to Great Lakes)
- Drinking Water
- Waste discharge
- Ecosystem Services
- Energy production (hydro, cooling, pumped storage)
- Infrastructure and Transportation

CHART 1
FACTS AND FIGURES



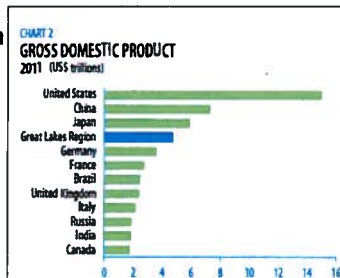
- GDP of US\$4.7 trillion (2011)
- Population: 98 million (2012)
- 28% of Canadian/U.S. economic activity
- 46 million jobs
- 29% of Canadian/U.S. workforce
- More than half of Canada/U.S. cross-border trade

BMO Harris



Economic Value

- Industries in the Laurentian Great Lakes region account for **more than a third** of the combined Canadian and U.S. gross national product.
- The Non-Farm Economy of the Great Lakes is **\$3.7 trillion**, employing **43.4 million** and representing **30% of GDP** in the U.S. and Canada combined (Marker 2005).
- **577,500 farms** in Canada and the U.S. generate **\$53.4 billion** (Marker 2005).
- Gross production in the Great Lakes is **fourth worldwide**, between Japan and Germany. (BMO Harris Analysis)



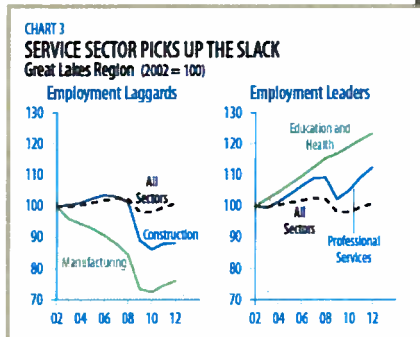
Economic Value

- More than **1.5 million jobs** are directly connected to the Great Lakes, generating **\$62 billion** in wages:
 - **Manufacturing:** 994,879 jobs
 - **Tourism and recreation:** 217,635 jobs
 - **Shipping**, including freight transport and warehousing: 118,550 jobs
 - **Agriculture, fishing and food production:** 118,430 jobs

BMO Harris

- In 2009, the approximately 83 million people in the Great Lakes St Lawrence region contributed nearly **a quarter of the nation's exports** and **27 percent of the U.S. gross domestic product**.

<http://ns.umich.edu/new/releases/8280>



Investment in the Great Lakes

U.S. Study

- A \$25 billion Great Lakes restoration investment would return **\$80 to \$100 billion** in short and long-term economic gains.
- A significant portion would go directly to major population centers on the shores of the Lakes.



-Brookings Institution's "Healthy Waters, Strong Economy" (2007)

Canadian Study

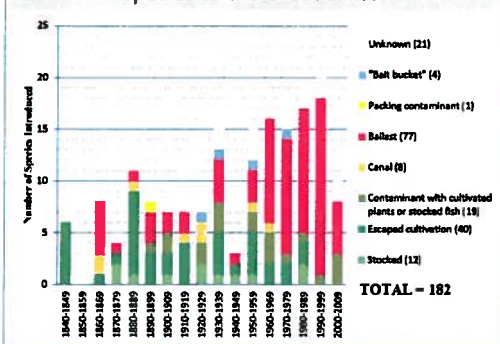
- Significant economic return when we invest in actions that keep the Great Lakes healthy and sustainable.
- Economic return of up to **two dollars for every dollar** we invest in actions to prevent high levels of nutrients from entering the lakes.
- Economic return of up to **\$35 for every dollar invested** in coastal wetland protection.

-"Assessing the Economic Value of Protecting the Great Lakes Ecosystems" (2011)

Aquatic Invasive Species

- Ballast water standards
- Hydrological separation of Great Lakes from Mississippi River -- Asian Carp
- Organisms in trade

Means of introduction of aquatic invasive species to the Great Lakes



Ballast Water Regulation Framework

- International Maritime Organization (IMO) Ballast Water convention
- United States Coast Guard final rule
- United States Environmental Protection Agency Vessel General Permit (VGP)
- State of Michigan Ballast Water Control General Permit, Port Operations and Ballast Water Discharge
- State Certification of the USEPA VGP under Section 401 of the Clean Water Act



IMO Discharge Level for Live Organisms

- Technologically achievable, numeric concentration-based standards for multiple sizes/types of organisms
- United States Coast Guard and United States Environmental Protection Agency use the numeric IMO standard
 - Existing vessels:
 - IMO first dry docking after 1/1/2014
 - First dry dock after 1/1/2016
 - New vessels: Upon delivery
- International Maritime Organization Ballast water Convention
 - Enters force 12 months after ratification by 30 States, representing 35% of world merchant shipping tonnage.
 - As of 1/2/13, 36 states contracted, with 29% of tonnage.
 - Flags of Convenience



Organisms in Trade

- Plants & animals popular in aquaria and ornamental ponds
- Live bait
- Live food industry
- Aquaculture
- Internet Sales



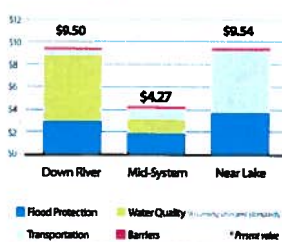
- Progress has been made to reduce disease and dispersal of AIS through aquaculture and sale of live bait.
- Large-scale efforts to complete the effort have been limited by lack of funding to implement existing laws and regulations for pathways such as Internet and pet shop sales.

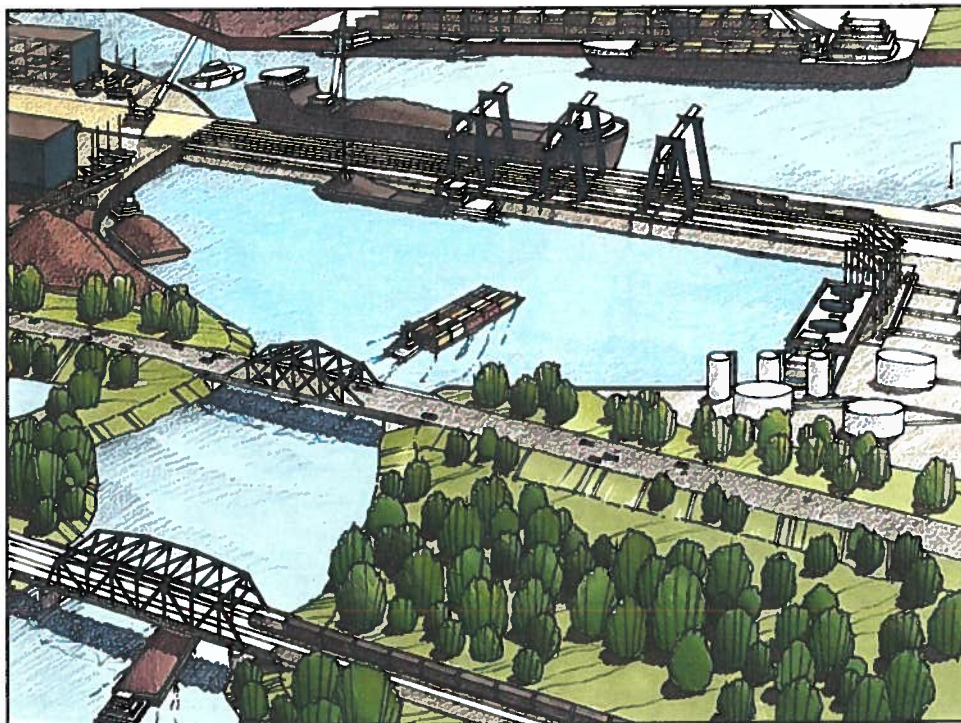
Chicago Area Waterway System



Chicago Area Waterway System

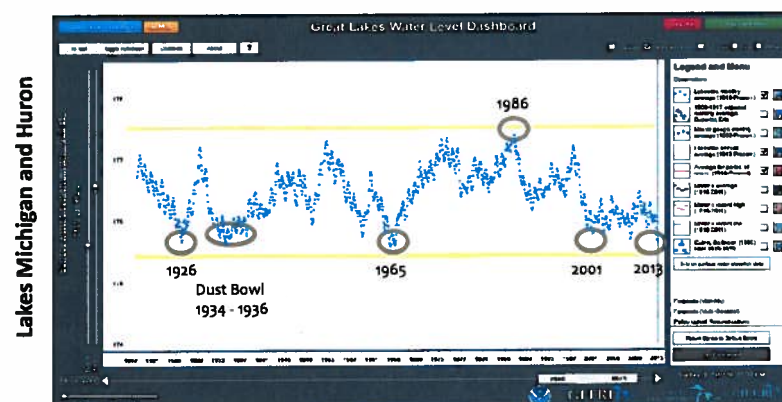
Total Costs* (\$ Billions)





Water Levels

Great Lakes water levels are at lows that stress commercial navigation and recreational boating

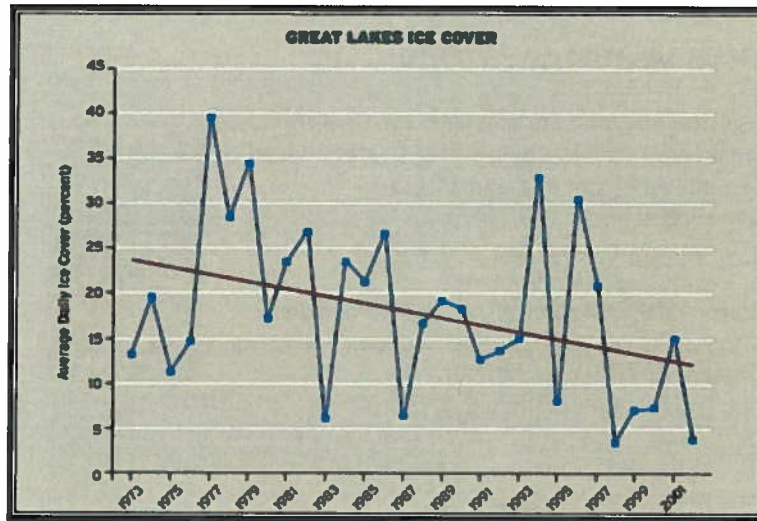


Contributing factors:

Paleo Lake Level Curves – long periods between highs and lows - decades

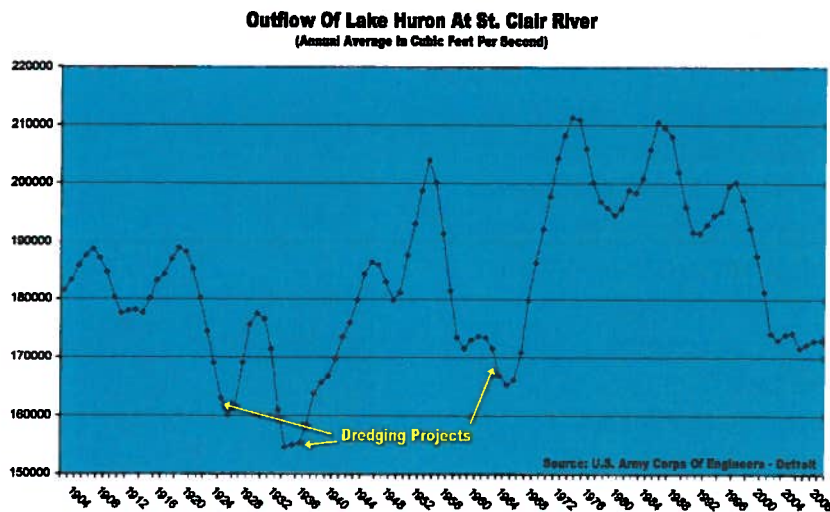
Decreased ice cover – declined 71 percent over past 40 years, allows evaporation

Drought – below average precipitation for over a decade



Great Lakes ice coverage has declined an average of **71 percent** over the past 40 years.

Water Levels



Michigan's Water Strategy

- In his Energy and Environment message, the Governor asked OGL to lead an effort to develop a Water Strategy based on *"ecosystem approach"* and that addresses:

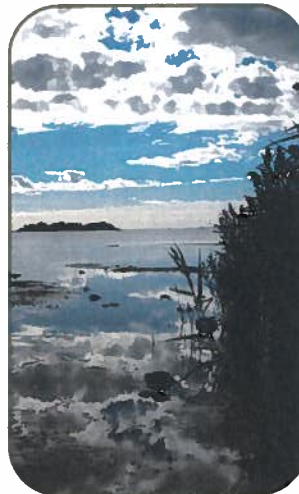
- Invasive species
- Water withdrawal, water use and conflict
- Water quality and Infrastructure
 - Storm water, sewer systems, green infrastructure
- Historical pollution and restoring Michigan's waterways
- Algal blooms and muck
- Healthy Coastal communities
- Beach closings



- ❖ Develop a comprehensive water strategy leveraging the value of water assets while preserving ecological integrity.
- ❖ Enhance human use and enjoyment built upon capacity of the system to provide value and sustain use.
- ❖ Enhance of economic capacity and connection to place are essential elements.

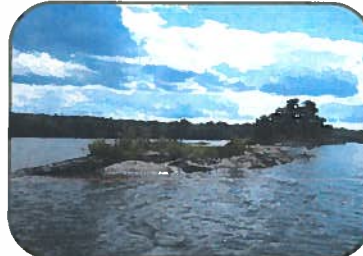
Background

- **Scope**
 - Address all aspects of Michigan's water and its use and enjoyment
 - Define healthy systems
 - Create engagement strategy
 - Define outcomes and metrics
 - Align with state land plan
 - Internal working team
 - External advisors
- **Timeframe**
 - Draft by late fall 2013



Engagement Strategy Goals

- Build upon previous and existing work
- Improve methods of engaging public
- Understand what groups and individuals value most about water resources
- Represent community fabric across Michigan
- Test community ability to coalesce around vision to design and carry out the strategy



Thank you



